

ABSTRACT OF THE DISCLOSURE
EXTENDED FOCAL REGION MEASURING APPARATUS AND METHOD

A method and apparatus for measuring an apparent depth of a
5 section of an animal body are disclosed. Light is focused
concurrently to an extended focal region comprising a
plurality or continuum of measurement locations. Light
reflected by a refractive index interface coincident with
one of the plurality of measurement locations is detected.
10 Detected light signals are generated from light reflected
from first and second interfaces respectively defining the
section under investigation, so that the apparent positions
of the interfaces may be derived. A confocal arrangement
and an axicon element may be employed. Preferably, the
15 section is the aqueous humor of an eye. From changes in its
refractive index corresponding changes in glucose
concentration in the aqueous humor and, in turn, in the
bloodstream of a patient may be derived, offering a non-
invasive monitoring means for diabetic patients. Other
20 compounds and structures of the body may alternatively be
investigated.